

SIGNAL TRANSDUCTION MECHANISMS IN ANTICANCER DRUG ACTION AND RESISTANCE. Thomas R. Tritton, Department of Pharmacology, University of Vermont Medical School, Burlington, VT 05405 USA.

One of the hallmarks of cancer is loss of cellular growth regulation. Now that it is established that many oncogenes code for proteins involved in signalling and growth control, there is an increased recognition that an understanding of these basic processes offers new prospects for controlling neoplasia. In this presentation we will discuss two ideas stemming from our laboratory's work: (1) the ability of cytotoxic anticancer drugs like adriamycin to kill susceptible cells appears to involve a series of events initiated at the plasma membrane and proceeding through the protein kinase C signal transduction pathway to ultimate damage to DNA in the nucleus; and (2) resistance to antineoplastics, particularly multidrug resistance, may be influenced both by modulation of protein kinase C biology, and by the action of oncogenes like *c-fos* and *c-jun*, which bind to the promoter region of genes involved in drug resistance and regulate their transcription.